

SEQUENCE LISTING

SEQ ID NO:1 XCENP E PROTEIN:

MSEGD AVKVCVRVRPLIQREQGDQANLQWKAGNNTISQVDGTKSFNFDRV
 FNSHESTSQIYQEIAVPIIRSALQGYNGTIFAYGQTSSGKTYTMMGTPNS
 LGIIPQAIQEVFKIIQEIPNREFLLRVSYMEIYNETVKDLLCDDRRKKPL
 EIREDFNRNVYVADLTEELVMVPEHVIQWIKKGEKNRHYGETKMNDHSSR
 SHTIFRMIVESRDRNDPTNSENCDGAVMVSHLNLVDLAGSERASQTGAEG
 VRLKEGCNINRSLFILGQVIKKLSDGQAGGFINYRDSKLTRILQNSLGGN
 AKTVIICTITPVSFDETLSTLQFASTAKHVRNTPHVNEVLDDDEALLKRYR
 KEILD LKKQLENLESSSETKAQAMAKEEHTQLLAETKQLHKEREDRIWHL
 TNIVVASSQESQQDQVRVKRRVTPWPGKIQNSLHASGVSDFDMLSR LPG
 NFSKKAKFSDMPSFPEIDDSVCTEFSDFD DALSMDSNGIDA EWNLASKV
 THREKTS LHQSMIDFGQISDSVQFHDSSKENQLQYLPKDSGDMAE CRKAS
 FEKEITSLQQQLQSKEEEKELVQS FELKIAELEEQLSVKAKNLEMVTNS
 REHSINAEVQTDVEKEVVRKEMSVLGD SGYNASNSDLQDSSVDGKRLSSS
 HDECIEHRKMLEQKIVDLEEF IENLNK KSENDKQKSSEQDFMESIQLCEA
 IMAEKANALEELALMRDNFDNI ILENETLKREIADLERSLKENQETNEFE
 ILEKETQKEHEAQLIHEIGSLKKLVENAEMYNQNLEEDLET KTLLKEQE
 IQLAELRKRADNLQKKVRNFDLSVSMGDSEKLCEEIFQLKQSLSDAEAVT
 RDAQKECSFLRSENLELKEKMEDTSNWNQKEKAASLFEKQLET EKS NYK
 KMEADLQKELQSAFNEINYLNGLLAGKVPRDLLSRVELEKKVSEFSKQLE
 KALEEKNALENEVTCLSEYKFLPNEVECLKNQISKASEEIMLLKQEGEHS
 ASIISKQEII MQEQSEQILQLTDEVTHTQSKVQQTEEQYLEMKMHDDL F
 EKYIRNKSEAEDLLREMENLKGTMESVEVKIADTKHELEETIRDKEQLLH
 EKKYFFQAMQTIFPITPLSDSLPPSKLVEGNSQDPIEINDYHNLIALATE
 RNNIMVCLETERNSLKEQVIDLNTQLQSLQAQSI EKSDLQPKQDLEEGE
 VKLLLEME LLKGHLTDSQLSIEKLQLENLEVTEKLQTLQEEMKNIT IERN
 ELQTNFEDLKA EHDSLKQDLSENIEQSIETQDELRAAQEELREKQLVDS
 FRQQLLDCSVGISSPNHDAVANQEKVSLGEVNSLQSEMLRGERDELQTSC
 KALVSELELLRAHVKSVEGENLEITKKLNGLEKEILGKSESEVLKSMLE
 NLKEDNNKLKEQAEYSSKENQFSLEEVFSGSQKLVD EIEVLKAQLKAAE
 ERLEIKDRDYFELVQTANTNLVEGKLETPLQADHEEDSIDRRSEEMEIKV
 LG EKLERNQYLLERLQEEKLELSNKL EILQKEMETSVLLKDDLQQKLES L
 LSENIILKENIDTTLKHHSDTQAQLQKTQQELQLAKNLAI AASDNCPITQ
 EKETSADCVH PLEEKILLLTEELHQKTNEQE KLLHEKNELEQAQVELKCE

VEHLMKSMIESKSSLESLOHEKHDTEQQLLALKQQMQVVTQEKKELQQTH
 EHLTAEVDHLKENIELGLNFKNEAQQKTTKEQCLLNENKELEQSQHRLQC
 EIEELMKSLKDKEALETLKESEQKVINLNQEMEMVMLEMEELKNSQRTV
 IAERDQLQDDRESVEMSIETQDDLRKAQEALQQQKDKVQELTSQISVLQ
 EKISLLENQMLYNVATVKETLSERDDLQSKQHLEFSEIETLSLSLKEKEF
 ALEQAEKDKADAARKTIDITEKISNIEEQLLQQATNLKETLYERESLIQC
 KEQLALNTEHLRETLKSKDLALGKMEQERDEAANKVIALTEKMSSLEEQI
 NENVTTLKEGEGEKETFYLRPSKQQSSSQMEELRESLTKDLQLEEAEK
 EISEATNEIKNLTAKISSLEEEILQNASILNEAVSERENLRHSKQQLVSE
 LEQLSLTLKSRDHAFQSKREKDEAVNKIASLAEEIKILTKEMDEFDRSK
 ESLQEQQSSHLSEELCTYKTELQMLKQQKEDINNKLAEKVKEVDELLQHLS
 SLKEQLDQIQMELRNEKLRYELCEKMDIMEKEISVLRLMQNEPQQEEDD
 VAERMDILES RNQEIQELMEKISAVYSEQHTLLSSLSELQKETEAKHHC
 MLNIKESLSSTLSRSFQSLQTEHVKLNTQLQTLNKFVVRVTA AVKEDH
 SLIKDYEKDLAAEQKRHDELRLQLQCLEQHGRKWSDSASEELKFCEIEFL
 NELLFKKANI IQSVQDDFSEVQVFLNQVGSTLQEELEHKKGFMQWLEEFQ
 DLHVD AKKLSEGMQQENRRRIASTIQLLTKRLKAVVQSKIQREITVYLNQF
 EAKLQEKKEQNKELMRRMEHHGSPASVMEEENARLLGILKTVQDESKKLQ
 SRIKMLENELNLVKDDAMHKGEKVAILQDKLLSRNAEAE LNAMQVKLTKK
 QDNLQAAMKEIENLQKMVAKGAVPYKEEIDNLKTKVVKIEME KIKYSKAT
 DQEIAYLKSLEDKEEGLRRLKEELRRAQADNDTTVCVPKDYQKASTFPV
 TCGGGSGIVQSTAMLVLQSEKAALERELSHYKKKYHHL SRTMSSSEDRKK
 TKAKSDAHSSHTGSSHRGSPHKTETTYRHGPVTPERSEMP SLHLGSPKKSE
 SSTKR VVSPNRSEIYSQLVMSPGKTGMHKHILSPSKVGLHKKRALSPNRS
 EMPTQHVISP GKTGLHKNLTESTLFDNLSSPCKQQKVQENLN SPKGKLFQ
 VKSKSMPYCP SQFFDNSKL GDFSELNTAESNDKSQAENWWYEAKKETAPE
 CKTS

SEQ ID NO:2 XCENP-E NUCLEOTIDE

GAATTCCGGAGTCGGATAGGCTAGTCGGGCGAGGGAAATTCAA ACTGGTT
 ATAGAAGAACTTGAACCGCCGCCAAAAGGGACTAAAGTGACAGAGACAG
 GGAGCGGTGTCGGTACCGATTTCTCCACTAATCGGTCTCAAAATGTCCGA
 GGGAGATGCAGTTAAAGTGTGTGTGAGGGTTCTGGCCGCTTATACAGAGAG
 AACAAAGGGGATCAAGCCAACCTGCAATGGAAGGCTGGAAACAACACCATT
 TCCCAAGTTGATGGGACAAAGTCTTTCAATTTTCGATCGTGTATTTAATTC
 TCACGAATCAACAAGTCAAATTTACCAAGAAATAGCAGTACCTATCATAC

GATCAGCTTTGCAGGGATATAATGGCACAATATTTGCATACGGACAGACA
TCTTCAGGCAAGACGTACACAATGATGGGAACACCAAATTCATTGGGCAT
AATACCCCAAGCCATACAGGAAGTTTTTAAAATTATTCAGGAGATACCGA
ACAGAGAGTTTCTTCTAAGAGTTTCTTATATGGAGATTTACAATGAAACT
GTGAAAGACCTACTGTGTGATGACAGAAGAAAGAAGCCCTTGGAATTCG
CGAGGATTTTAATAGAAACGTGTATGTTGCTGACCTGACTGAAGAACTTG
TAATGGTTCCTGAACATGTAATACAGTGGATCAAAAAGGGTGAAAAAAC
AGACATTATGGAGAGACTAAAATGAATGATCATAGTAGTCGTTACATAC
AATATTTAGAATGATTGTTGAAAGCCGAGACAGAAATGATCCCACAAATT
CAGAGAACTGTGATGGAGCTGTCTATGGTATCTCACTTGAATTTGGTAGAT
CTTGCTGGCAGTGAAAGAGCAAGCCAAACTGGAGCTGAAGGTGTGAGACT
TAAGGAAGGCTGCAACATCAACCGCAGCTTGTTTATCCTTGGACAGGTTA
TTAAGAAGCTTAGCGACGGCCAGGCTGGTGGATTTATAAACTACAGAGAC
AGCAAACTCACCAGAATTCTCCAAAATTCATTGGGAGGAAATGCTAAAC
GGTTATAATTTGCACAATTACGCCAGTTTCTTTTGATGAGACTCTAAGTA
CACTTCAGTTTGCCAGTACTGCCAAACATGTGAGAAATACTCCCCATGTT
AATGAGGTCCTGGATGATGAAGCGTTGCTAAAAAGGTACAGAAAGGAAAT
CTTGGATTTAAAGAAACAATTAGAGAATTTAGAGTCATCGTCTGAAACAA
AAGCTCAAGCAATGGCTAAAGAAGAGCATAACAGTTGCTAGCTGAAATC
AAACAACCTACACAAAGAGAGAGAAGATAGAATATGGCACTTGACAAATAT
TGTTGTTGCTTCATCCCAAGAATCTCAACAGGACCAAAGGGTCAAACGAA
AACGAAGAGTTACGTGGGCGCCAGGAAAAATCCAAAATAGTTTACATGCT
TCTGGTGTCTTGACTTTGATATGCTATCCAGATTACCTGGCAATTTTAG
CAAGAAGGCAAAGTTCTCTGACATGCCTTCATTTCCAGAAATTGATGACT
CTGTTTGTACAGAGTTTTCTGATTTTGATGACGCCCTCTCCATGATGGAC
AGCAATGGAATAGATGCAGAATGGAATTTAGCCAGTAAAGTAACTCACAG
AGAAAAGACATCACTTCATCAATCAATGATAGACTTTGGACAGATTTCTG
ACAGTGTTCAAGTTTCATGATTCTTCTAAGGAAAACCAGCTACAATACCTC
CCCAAAGACTCTGGTGATATGGCTGAATGCAGAAAAGCTTCTTTTGAAAA
AGAGATCACAAGCCTCCAGCAACAACCTACAGTCAAAGGAGGAAGAAAAAA
AGGAACCTGTACAAAGCTTCGAGCTCAAGATAGCAGAACTGGAAGAGCAG
CTTAGTGTCAAAGCTAAAAATCTAGAGATGGTTACAACTCGAGAGAGCA
TTCCATTAATGCTGAAGTCCAAACAGATGTTGAAAAGGAAGTTGTGAGAA
AAGAAATGTCAGTCCCTGGAGACTCTGGTTACAATGCATCAAACAGTGAC
CTACAGGATAGTTCTGTTGATGGTAAACGTCTAAGCAGCTCCCATGATGA
GTGTATAGAACACAGAAAAATGCTGGAACAAAAGATCGTTGATTTAGAAG
AGTTTATTGAAAACCTTAACAAGAAAAGTGAGAATGATAAACAAAAATCT

TCTGAGCAAGATTTTATGGAGAGTATTCAGCTATGTGAAGCTATAATGGC
AGAAAAGGCAAATGCACTGGAGGAACCTGGCACTTATGCGAGATAATTTTG
ACAATATTATTCTAGAGAATGAAACTCTAAAAAGGGAAATTGCAGATCTG
GAACGTTCACTCAAGGAGAATCAAGAAACCAATGAGTTTGAAATTCTGGA
GAAGGAAACTCAAAAAGAACACGAGGGCACAACCTAATCCATGAGATTGGCA
GTTTAAAGAAATTAGTTGAAAATGCAGAGATGTACAATCAAAATCTTGAG
GAAGATCTAGAACTAAAACAAACTTCTGAAAGAGCAGGAAATTCAACT
TGCAGAATTAAGGAAACGCGCAGATAACTTGCAGAAAAAGTACGAAATT
TTGATCTCTCGGTTTCCATGGGTGATAGTGAGAACTCTGTGAAGAAATC
TTTCAACTGAAGCAATCTCTTTCTGATGCTGAAGCTGTGACTCGCGATGC
TCAGAAGGAATGTTCTTTCCTCAGAAGTGAAAATCTAGAGCTGAAGGAGA
AAATGGAGGACACATCAAACTGGTACAATCAAAAAGAAAAGGCTGCGTCT
TTGTTTGAGAAGCAGCTGGAACTGAAAAATCAAACTACAAGAAAATGGA
AGCTGATTTGCAGAAAGAGTTGCAAAGTGCTTTTAATGAGATTAACTACT
TAAATGGCCTTCTGGCAGGAAAGGTCCCCAGAGATTTGCTTTCTCGTGTT
GAATTAGAGAAAAAGGTTTCTGAGTTCTCAAAGCAGCTTGAGAAAGCATT
GGAAGAAAAAATGCCTTGGAAGATGAAGTGACTTGCCTATCAGAATACA
AATTTTTGCCAAATGAAGTTGAATGCTTGAAAAATCAGATCAGCAAGGCT
TCTGAAGAGATAATGTTATTAAAGCAAGAAGGAGAACATTCTGCATCTAT
TATAAGCAAACAAGAGATTATCATGCAGGAGCAATCTGAGCAGATTTTAC
AACTGACTGACGAAGTGACACACACACAGTCAAAGTGACAGAGACTGAA
GAGCAATACTTGGAGATGAAGAAAATGCATGATGATCTTTTTGAAAAGTA
TATCAGAAACAAAAGTGAAGCTGAAGACCTTTTAAGAGAAATGGAGAACC
TTAAAGGCACTATGGAGTCTGTGGAAGTAAAGATTGCTGACACAAAACAT
GAACTTGAAGAACTATAAGGGATAAGGAGCAACTGCTTCATGAGAAAAA
ATACTTTTTTCAAGCAATGCAGACTATATTTCCGATTACACCTCTTTCAG
ACTCGCTTCTCCCTCAAAATTAGTTGAAGGGAACTCTCAAGACCCCAT
GAAATCAATGACTACCACAATTTAATAGCCCTTGCTACAGAAAGGAACAA
CATTATGGTGTGTCTAGAGACTGAAAGAAACAGTCTCAAGGAGCAAGTTA
TTGATTTGAACACTCAACTTCAAAGTCTTCAAGCACAAAGTATTGAAAAG
TCTGATCTCCAGAAGCCAAAGCAAGACTTGGAAGAAGGAGAGGTTAAACT
GCTTTTGGAGATGGAACCTACTGAAGGGACACCTAACTGACTCACAGCTGT
CTATAGAGAAATTGCAGCTGGAGAATCTGGAAGTTACAGAAAACTCCAA
ACACTTCAAGAAGAGATGAAAAATATTACTATAGAAAGGAATGAGCTTCA
GACCAACTTCGAAGACCTGAAAGCAGAGCATGATAGCTAAAACAAGACC
TTAGTGAAAACATTGAGCAGTCAATTGAAACACAAGATGAATTAAGGGCT
GCCCAGGAAGAGCTAAGAGAACAGAAGCAACTGGTTGATAGCTTTAGACA

ACAGCTTTTAGATTGTTCTGTAGGAATTTTCATCACCAAACCATGATGCAG
TTGCTAACCAGGAAAAGGTGTCATTGGGTGAAGTTAATTCGTTACAAAGT
GAAATGCTGCGTGGTGAAAGAGATGAGCTTCAAACATCTTGTAAGGCATT
AGTTTCAGAACTGGAGCTACTTCGTGCTCATGTAAAATCTGTGGAGGGAG
AAAACCTTGAAATCACAAAAAACTCAATGGCCTTGAAAAGGAGATATTG
GGCAAATCTGAAGAAAGCGAAGTGTTGAAGTCCATGTTGGAGAATCTAAA
GGAAGACAACAATAAGCTCAAAGAACAAGCAGAGGAATATTCTAGTAAAG
AAAATCAATTCAGTTTAGAAGAGGTGTTCAAGTGGTTCACAGAAGCTGGTA
GATGAGATAGAGGTCCCTGAAAGCACAGCTAAAGGCAGCAGAAGAAAGGCT
GGAAATAAAGGATAGAGATTATTTTGAACCTGTACAACTGCAAACACCA
ATTTAGTTGAGGGAAAATTGGAACTCCATTGCAAGCTGACCATGAGGAA
GACAGCATTGATCGGCGTTCTGAAGAAATGGAGATAAAAGTTCTTGAGGA
AAAACCTTGAGCGAAATCAGTATTTACTGGAAAGATTGCAAGAAGAAAAGC
TGGAAGTGTCTAACAACTTGAAATCCTTCAGAAAGAGATGGAGACGTCC
GTTCTATTAAAAGATGACCTGCAACAGAAGCTAGAAAGCTTGCTGAGTGA
AAACATTATTCTAAAAGAGAATATTGACACAACCCTAAAGCATCATTGAG
ATACTCAAGCTCAGCTGCAGAAAACACAGCAAGAGCTACAGTTGGCTAAG
AATCTTGCAATCGCTGCTTCTGACAATTGTCCAATACTCAAGAAAAGGA
AACCTCTGCAGATTGTGTGCATCCTCTGGAAGAAAAGATATTGTTATTAA
CTGAAGAATTGCATCAAAAACTAATGAACAGGAAAAATTACTACATGAA
AAGAATGAACCTGAACAAGCTCAGGTTGAGCTAAAGTGCGAGGTGGAACA
TCTGATGAAGAGTATGATCGAATCGAAGTCCTCACTTGAGTCCTTGACAGC
ATGAGAAACATGATACTGAACAACAACCTTCTTGCTCTTAAACAGCAGATG
CAAGTAGTTACTCAAGAAAAGAAAGAGCTGCAACAAACCCATGAACACTT
AACAGCTGAGGTGGACCATCTAAAAGAGAATATTGAATTGGGTTTGAATT
TTAAAAATGAAGCGCAGCAAAAGACCACTAAAGAGCAATGTCTGCTAAAT
GAGAATAAAGAACTTGAGCAAAGCCAGCACAGACTTCAATGTGAGATAGA
AGAGCTTATGAAAAGCTTAAAGGATAAAGAGTCAGCGCTGGAAACTTTAA
AAGAATCTGAACAAAAAGTAATTAATCTGAACCAAGAAATGGAAATGGTT
ATGCTGGAAATGGAGGAATTGAAAAATAGCCAGAGGACTGTAATTGCTGA
GAGGGACCAGCTGCAAGACGACCTAAGGGAGAGTGTTGAAATGTCCATTG
AAACTCAAGATGATCTAAGAAAGGCTCAAGAAGCATTGCAGCAGCAGAAA
GATAAAGTTCAGGAACTGACCTCCCAGATTTCTGTCCTGCAGGAAAAGAT
CTCTCTTCTGGAAAATCAGATGCTTTATAATGTTGCAACTGTGAAAGAAA
CTCTAAGCGAAAGAGATGACCTGAACCAGTCTAAGCAACACCTGTTCTCA
GAAATTGAACTCTTAGTCTGTCTTTAAAAGAAAAGGAATTTGCATTGGA
ACAAGCAGAGAAGGACAAAGCTGATGCTGCCAGGAAAACAATAGATATCA

CAGAGAAGATATCAAATATAGAAGAACAGTTACTTCAACAAGCCACCAAT
TTAAAGGAAACTCTTTATGAAAGAGAGAGTCTTATCCAGTGTAAGGAGCA
ACTGGCTTTGAACACAGAACACCTTAGGGAAACATTGAAGAGCAAAGACT
TGGCATTGGGTAAAATGGAGCAGGAGAGAGATGAAGCTGCCAATAAAGTA
ATAGCTCTTACAGAAAAGATGTCTTCTCTAGAAGAACAGATCAATGAAAA
TGTTACTACTCTAAAAGAAGGTGAGGGTGAAAAAGAGACCTTCTACCTTC
AGAGACCTTCAAAGCAGCAGTCTTCTTCCCAGATGGAAGAGCTCAGAGAG
TCTTTAAAGACCAAAGATTTGCAGTTGGAAGAGGCCGAGAAGGAGATAAG
TGAAGCTACTAATGAAATAAAGAATCTCACTGCTAAGATCTCTTCTCTAG
AGGAGGAGATTCTTCAGAATGCTAGCATTTTGAATGAAGCTGTAAGCGAA
AGGGAAAACCTTCGCCATTTCGAAGCAGCAACTGGTTTCAGAATTGGAGCA
GCTATCACTGACATTAAAGAGTAGAGACCATGCATTTGCGCAATCTAAAC
GCGAAAAGGATGAAGCTGTAAATAAAATAGCCAGTCTCGCTGAAGAAATA
AAGATCCTGACAAAAGAGATGGATGAATTCAGAGATTCAAAGGAATCCTT
GCAAGAACAGTCTTCCCATCTAAGTGAAGAGTTATGTACATATAAGACTG
AACTTCAAATGCTCAAGCAACAGAAAGAAGACATCAACAACAAACTTGCA
GAGAAAGTTAAGGAAGTGGATGAGCTATTGCAACACTTATCATCTCTAAA
GGAACAGCTGGACCAAATACAGATGGAGCTAAGGAATGAAAAGCTCAGAA
ACTATGAACTCTGCGAAAAGATGGATATCATGGAAAAGAAATCTCAGTG
CTGCGTTTAAATGCAGAACGAGCCTCAGCAGGAAGAAGATGATGTTGCAGA
ACGTATGGATATACTTGAGAGCAGAAACCAAGAAATACAGGAGCTGATGG
AAAAATCTCCGCTGTGTATTTCAGAGCAACACACTTTGCTCAGCAGTCTC
TCTAGTGAGCTTCAAAAGGAAACTGAAGCACACAAACATTGCATGTTAAA
TATAAAGGAATCTCTGTCTATCCAGCTCTCCAGATCCTTTGGCAGCTTGC
AACTGAGCATGTTAAGCTAAATACTCAACTGCAGACCCTTCTGAACAAA
TTTAAGGTTGTATACCGAACTGCTGCAGTCAAAGAAGATCATAGCTTGAT
CAAAGATTATGAGAAGGACCTTGCTGCTGAGCAAAAGAGGCATGATGAGC
TGCGACTCCAACTGCAGTGTTTGGAGCAGCACGGCAGAAAATGGTCGGAT
TCTGCATCTGAGGAACTCAAGTTCTGTGAAATTGAATTCTTGAATGAGTT
ACTTTTTTAAAAAGCAAATATAATTCAGAGTGTCAGGATGACTTTTCAG
AGGTGCAGGTATTCTTAAATCAAGTAGGATCAACACTGCAAGAAGAGCTT
GAGCACAAGAAAGGCTTTATGCAGTGTTTGGAGGAATTTGGAGATCTGCA
CGTCGATGCTAAGAACTCAGTGAAGGCATGCAACAGGAAAATAGGCGCA
TTGCTTCTACCATAAGCTCTTAACAAAAGGCTAAAGGCAGTTGTTTCAG
TCGAAAATACAACGTGAGATAACCGTATATCTGAACCAGTTTGAAGCGAA
ATTGCAAGAGAAGAAAGAACAAAACAAAGAACTTATGCGCAGAATGGAGC
ACCACGGCCCTAGTGCTAGTGTAATGGAGGAAGAAAATGCTAGACTTTTA

GGCATACTGAAAACGTGTTCAAGATGAATCCAAGAACTCCAATCAAGGAT
CAAAATGCTAGAAAATGAACTGAACTTGGTCAAAGATGATGCCATGCACA
AAGGTGAAAAAGTTGCAATTTTGCAAGACAACTACTAAGCAGAAACGCC
GAAGCTGAGCTAAACGCAATGCAGGTGAACTAACTAAAAAGCAAGATAA
TCTTCAGGCTGCAATGAAAGAAATAGAAAACCTACAGAAAATGGTTGCCA
AAGGTGCAGTACCATATAAAGAAGAAATTGACAACCTTAAAACTAAGGTG
GTAAAGATTGAAATGGAAAAATAAAGTACTCAAAAGCAACAGACCAAGA
GATTGCCTACTTAAAGTCTTGTTTGGGAAGATAAGGAAGAAGGCTTGCGTA
GGTTAAAAGAGGAACTTAGGCGAGCACAGGCAGACAACGATACAACAGTT
TGTGTTCCAAAAGATTATCAGAAAGCTTCAACTTTCCTGTGACTTGTGG
TGGTGGAAGCGGTATAGTGCAGAGCACAGCAATGCTTGTGCTGCAGTCGG
AAAAAGCCGCTTGGAAAGGGAGCTGTACATTATAAGAAGAAATATCAT
CATTTATCACGGACTATGTCAAGTTCTGAAGATCGAAAGAAAACAAAGGC
AAAATCTGATGCTCATTCTTCTCATACTGGATCATCACACAGAGGCTCGC
CTCACAAAACGAACTTACAGACATGGCCCTGTTACTCCAGAAAGGTCT
GAAATGCCAAGCCTACACCTAGGATCTCCAAAGAAGTCGGAGTCCAGCAC
TAAACGTGTTGTGTACCAAACAGGTCCGAAATCTACAGCCAATTAGTAA
TGTCTCCAGGCAAGACCGGGATGCATAAACATATACTTTCTCCAAGCAAG
GTTGGACTGCACAAAAGCGTGCCCTGTCTCCAAACAGATCGGAGATGCC
CACCCAGCATGTCATATCCCCTGGCAAGACCGGACTGCATAAAAATCTAA
CTGAAAGCACGTTATTTCGACAATTTGTCTTCTCCATGCAAACAGCAAAAA
GTACAGGAAAACTAAATTCCCCTAAAGGCAAATTATTTGATGTGAAGTC
AAAATCGATGCCTTACTGTCCATCTCAGTTTTTTTGATAATTCTAAGCTTG
GTGATTTTTTCAGAGCTCAACACAGCAGAGAGCAATGACAAAAGTCAGGCT
GAGAACTGGTGGTATGAAGCAAAAAAGAAACGGCACCTGAATGTAAAC
ATCCTAGATCCCTGTACATCTGACTCTCCTGTCCTGCAAAGAGACTTGCT
ACTCTGCCTTCTTGTAGGAAGAAACACTAGAACTGCCATGTCTGCATAA
AGGAGTCTCACTGGAAGCAAAAGTTGTTCTTTAGTAGTAATCACTGGTTG
GGCGAGTGGTTACGTCTTTAAATAAAGTGCAATACGTCTCACGTCTATT
TTATATGTTATGTCTGTGTATTTGTTACACTTTTAAGTCCCTTGACTTCA
TATTTGGCTCATCTGTAGTTTCTTTGTGTTTGCGCACACACACTGGTG
AAAAATGACATTTGCAGTGTATTGTTTTACTGACTGGTCTCTCTGGGGCC
ATCCATGCAAAGCACCATTAGTGTGCCAATGTTTTTCACTACTTATTATT
ATGTCTGACTTTGTGAAATAGAAAATACTACAAAAGATAGGGCAAAAGTT

GTTTTCTCACTAGGTAAACGATATGGGTTTAACTTAATTATTCTCCTAAT
AAAATATTCTATATAATGGCATCTCATTAGGTGACCTAATGGTTATTCTG
CACTCTTGTAACCTTTTTTAAATTTCACTCGTAATAAAGCAGCCCTGAT
TTTAAATTAAAAAAAACGGAATTC